124-120,122

#17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application Of:

NORBERT BUSCH ET AL

Serial Number: 015,752

Filed: February 27, 1979

For: AN ETHER OF N-PROPANOL AMINE

Group Art Unit 122

Examiner: TOVAR

APPEAL BRIEF

HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D. C. 20231

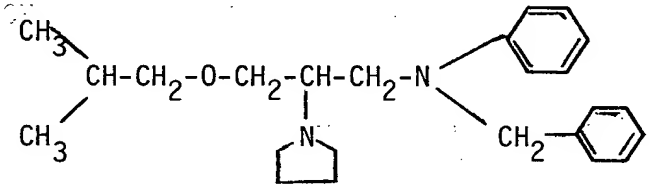
Sir:

Applicants appeal from the final rejection of the Primary Examiner dated November 6, 1979, finally rejecting Claims 7 and 8.

An oral hearing is respectfully requested.

THE CLAIMS ON APPEAL

7. An ether having the formula

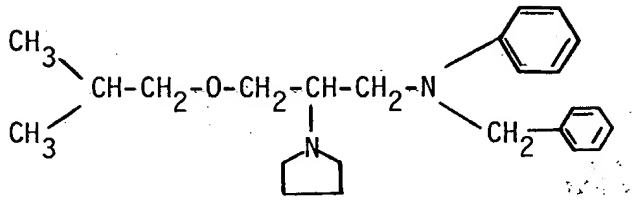


and pharmaceutically acceptable acid addition salts thereof.

8. An ether according to Claim 7, wherein the acid addition salt is the hydrochloride or the acid fumarate.

THE INVENTION

The claimed invention is directed to an ether having the formula



and pharmaceutically acceptable acid addition salts thereof. The compound of the present invention is useful as a medicament especially in the treatment of cardiovascular conditions, based on its ability to increase the output of coronary blood, to reduce the rate of heart beat and, especially, to increase the oxygen content of the venous cardiac blood.

REFERENCES OF RECORD RELIED UPON

No prior art has been cited against the claimed compounds.

THE REJECTION

Claims 7 and 8 stand rejected under 35 USC 251 for:

(1) being directed to new matter;

(2) being based on a declaration not complying with 37 CFR 1.175 (a)(1), (2), (3) and (5); and

(3) enlarging the scope of the claims of the original patent more than two years after the grant of the original patent.

SUMMARY OF THE ARGUMENTS

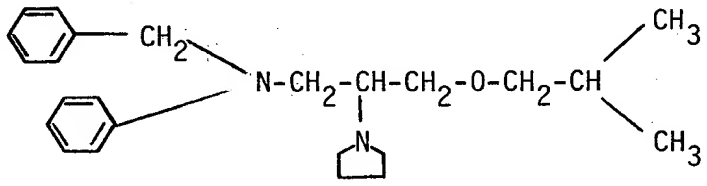
This reissue application is in full compliance with the statutory provisions as to reissues, 35 USC 251. Furthermore, this application is in full compliance with the requirements of 37 CFR 1.175 as to the reissue oath or declaration. Finally, correction of the structural formula of the compound in question to the inherently correct formula is not new matter.

ARGUMENTS

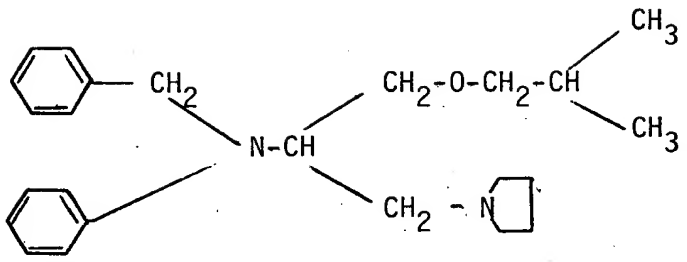
(1) Rejection under 35 USC 251 as being directed to new matter.

The Examiner has asserted that the introduction of a structural formula, not described in the original application, into the specification and claims constitutes new matter.

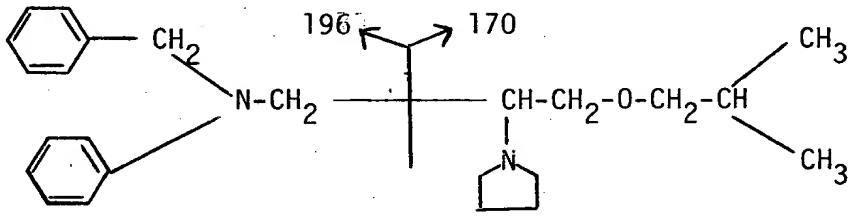
This application is a reissue application. Reissue is necessitated by the discovery that the structure of compound I of the present invention, resulting from the reaction of 1-(3-isobutoxy-2-chloro) propyl pyrrolidine and N-benzylaniline results in a compound of the following structure:



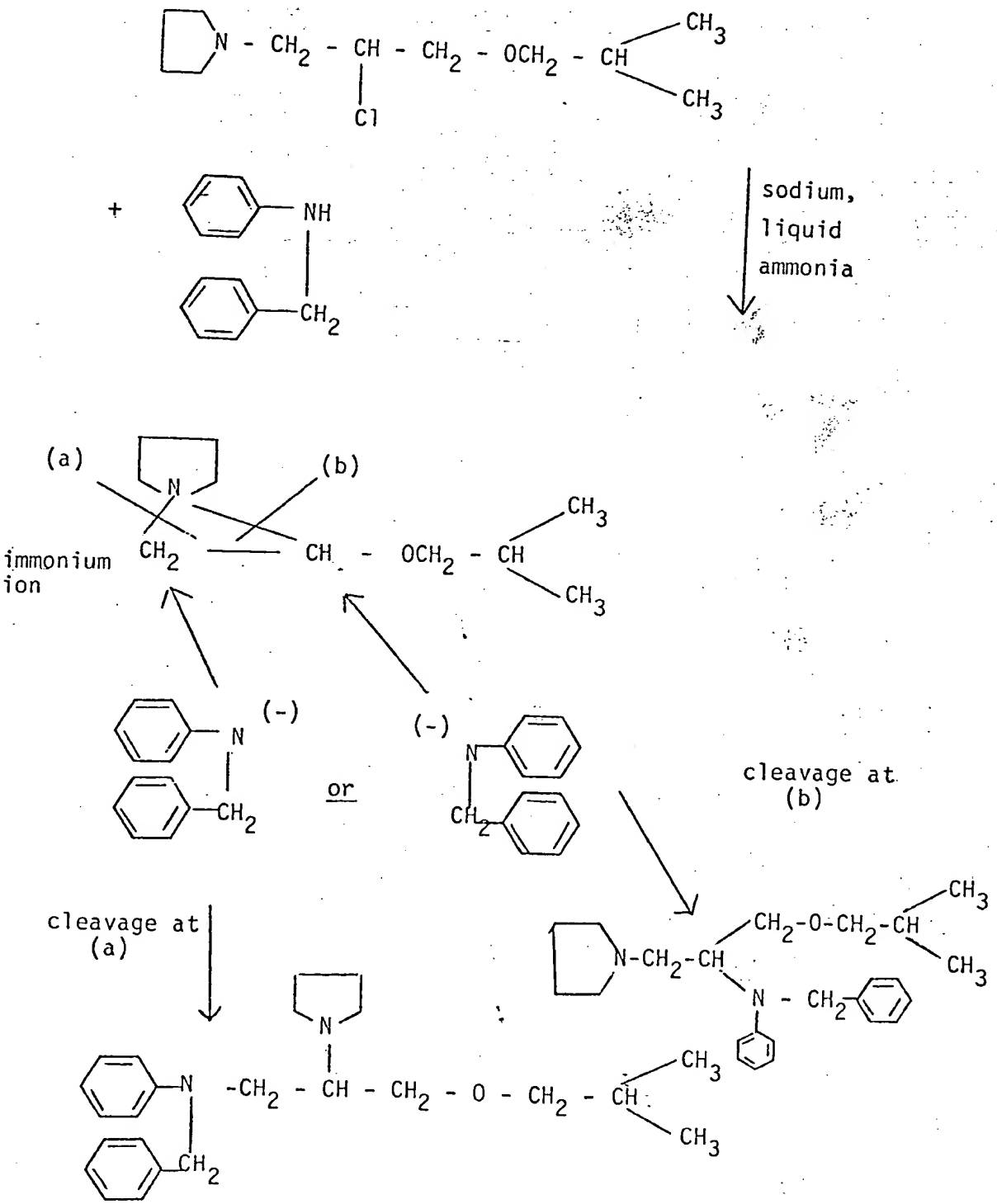
rather than the structure originally disclosed, to wit:



While the molecular weight of compounds of both structures, above, based on the empirical formula $C_{24}H_{34}N_2O$ is the same, the mass spectral analysis of the compound, shows a weak molecular ion at m/e of 366.2620 (confirming the molecular formula) but, significantly, also shows fragments at m/e 196 ($C_{14}H_{14}N$) and m/e 170 ($C_{10}H_{20}NO$). These fragments can only arise from the former structure, above, to wit:



The discovery of this error came about after issuance of U.S. Patent 3,962,238, when a third party conducting additional testing on the above-noted compound raised a question as to ambiguity in the synthesis route. In other words, based on the reaction involving an immonium ion intermediate, there was a possibility of two products being formed depending on the site of bond cleavage, as illustrated in the following reaction scheme:


sodium,
liquid
ammonia
(a)
(b)
immonium
ion
(-)
(-)
or
cleavage at
(b)
cleavage at
(a)

However, while the products resulting from the process of the present invention have the same utility and most physical analytic data remain unchanged, mass spectral analysis shows the correct structure to have resulted via cleavage at (a).

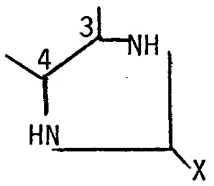
Applicants' original assumption as to the structural formula, i.e., based on cleavage at (b), was based on earlier research involving reactions with diaryl ketones rather than N-benzyl aniline and certain published reactions which indicated cleavage at (b). The structure so-posited was not inconsistent with NMR or IR spectral analysis of the compound.

Subsequent research by Applicants and a third party have confirmed that the presently corrected structural formula is correct and is the inherent product of the synthesis disclosed.

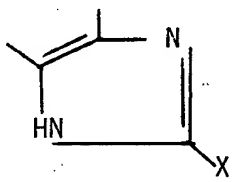
The Board's attention is directed to the unpublished decision of the Patent and Trademark Office Board of Appeals, Ex parte Marsili et al, Appeal No. 378-66, decision dated September 27, 1979. This decision is directly in point since it considered the question of whether it was new matter to change the structural formula for the claimed product in the specification and claim. The Board of Appeals found that such a change was not new matter under 35 USC 132 and, in fact, readily approved such a correction, at page 7, stating:

> " To refuse correction of the structural formula of Appellants' claimed compounds, which have been found patentable by the Examiner, would lead to the absurdity of issuing a patent which teaches the public in its specification the wrong scientific formula for the new products."

In particular, Marsili, was concerned with a claim to a novel Rifamycin wherein the specification and the claims indicated the following imidazoline ring across the 3,4-position of the Rifamycin-SV type structure



as originally filed. Further, more refined, analytic investigation showed that the ring in fact was the imidazole ring, which is the stable aromatic structure:



Appellants, in Marsili, having submitted a showing under 37 CFR 1.132 to support the propriety of the change and to show that the proposed structure was an inherent characteristic of the claimed compounds, were held not to have introduced new matter.

In this regard, Appellants have submitted a Declaration under 37 CFR 1.132 which shows not only the genesis of the discovery of the error but also shows the inherency of the now amended structure for the compound I of this invention. In this regard, the Board's attention is directed to Exhibits C and D of said Declaration wherein independent investigation by Wallace Laboratories confirms that a rearrangement occurs in the last step of forming compound I of this application rather than a simple displacement of the chlorine atom. Additionally,

Exhibit B shows a comparison done by the University of Paris as between the product produced by Appellants' process and an unambiguous synthesis of a compound of the formula as now amended. This comparison established that the two samples were one and the same compound. Finally, in Exhibit F, another study by the University of Paris establishes that the structures of additional compounds disclosed in this specification are consistent with that of compound I, as amended, i.e., produced by the rearrangement in the last reaction step.

Accordingly, it is submitted that Applicants have established the inherency of the structural formula of compound I, as now amended, and, as such, have overcome this ground for rejection.

(2) Rejection under 35 USC 251 as being based on a declaration not complying with 37 CFR 1.175(a)(1), (2), (3) and (5).

The Examiner has asserted that the reissue declaration fails to comply with the requirements of 37 CFR 1.175, as amplified by the MPEP.

Applicants have submitted, and the Examiner has entered, a Supplemental Reissue Declaration in full compliance with 37 CFR 1.175 (see Applicants response of May 12, 1980 and the Advisory Action mailed June 11, 1980).

In particular, Applicants have clearly set forth that they believe the patent to be wholly or partly inoperative by reason of a defective specification. The particular defect being the mischaracterization of the structural formulae of the compounds disclosed and claimed.

While Applicants have clearly shown that the structural formula of the compound of Claim 7 is correct and that such structure is inherently produced by the disclosed synthesis; the structural formulae of the other compounds which were originally disclosed and claimed is open to question. Accordingly, to correct this defect, Applicants have limited the scope of their claims to the compound for which no ambiguity exists as to the structural formula (compound of Claim 7). Furthermore, Applicants have clearly indicated that the errors arose without any fraudulent or deceptive intent due to the belief that the structure determined in earlier research work (involving reactions between chloramines and diaryl ketones) was applicable here and not inconsistent with NMR and IR spectra of the originally claimed compounds, nor inconsistent with reported reactions of N-substituted propylamines.

Moreover, the previously noted Declaration under 37 CFR 1.132 clearly sets forth not only the inherency of the structural formula now claimed, but also the facts as to how such error was discovered and how Applicants traced the genesis of the error.

Accordingly, it is submitted that Applicants have fully complied with the requirements of 37 CFR 1.175.

(3) Rejection under 35 USC 251 as enlarging the scope of the original patent more than two years after the grant of the original patent.

The Examiner asserts that Applicants have enlarged the scope of the claims in contravention of 35 USC 251, last paragraph.

In so far as this rejection is based on the Examiner's holding of the claims being directed to new matter, it is in error for the reasons previously stated with respect to the new matter rejection. Moreover, it is quite clear that Applicants have decreased the scope of claim coverage. Referring to issued Claim 1 of Letters Patent No. 3,962,238: Claim 7 is now directed to the correct structural formula for the compound wherein A is pyrrolidino (as opposed to the permissible "morpholino, pyrrolidino, piperidyl and di-lower-alkyl amino" of the original claim); R is isobutyl (as opposed to the "straight or branched chain lower alkyl, or benzyl" of the original claim); Ar is phenyl (as compared to the "aryl" of the original claim) and Ar^1 is phenyl (as compared to the "aryl or pyridyl" of the original claim). Likewise, Claim 8 limits the "pharmacologically acceptable salts" to the hydrochloride or the acid fumarate.

Accordingly, it is submitted that Applicants have not enlarged the scope of the claims and are in full compliance with the provisions of 35 USC 251.

Accordingly, it is respectfully submitted that the decision of the Primary Examiner in finally rejecting this application should be REVERSED.

Respectfully submitted,
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McCLELLAND & MAIER, P.C.

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